

# Teaching TAs to Teach: Strategies for TA Training

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## ABSTRACT

“The only thing that scales with undergrads is undergrads”.

As Computer Science course enrollments have grown, there has been a necessary increase in the number of undergraduate and graduate teaching assistants (TAs, and UTAs). TA duties often extend far beyond grading, including designing and leading lab or recitation sections, holding office hours and creating assignments. Though advanced students, TAs need proper pedagogical training to be the most effective in their roles. Training strategies have widely varied from no training at all, to semester-long prep courses. We will explore the challenges of TA training across both large and small departments. While much of the effort has focused on teams of undergraduates, most presenters have used the same tools and strategies with their graduate students. Training for TAs should not just include the mechanics of managing a classroom, but culturally relevant pedagogy. The panel will focus on the challenges of providing “just in time”, and how we manage both intra-course training and department or campus led courses.

## CCS CONCEPTS

• **Social and professional topics**–Computer science education

## KEYWORDS:

Teaching assistants; graduate student instructors; TA training; pedagogy; undergraduate student instructors

## 1 Summary

This panel was originally accepted to SIGCSE 2020 but was unable to be presented [8]. We propose a revised panel, designed for virtual participation.

This panel brings together faculty from both large-public, and small-private institutions to discuss practices for TA training. While many institutions only require limited orientations, we believe it’s important to give TAs ample opportunities to learn to teach. The panelists will share approaches that are at all levels of

the spectrum: local to their courses, and University initiatives.

While many institutions require some general TA training, it is often limited and not sufficient to properly prepare students to be effective TAs. We will discuss strategies at the department level to provide courses geared towards undergraduates, as well as how instructors can use just-in-time training of TAs during a course. These courses cover socially and culturally relevant pedagogy and are designed to help create a community amongst not only the teaching staff, but our departments as a whole. Panelists also address areas that we believe have room for improvement, and share recent work to revamp training programs. This panel will be relevant to anyone who teaches with undergraduate TAs, whether that’s undergrad-only programs or scaling introductory courses with dozens of TAs.

## 2 Virtual Event

As a virtual panel, we still aim for vibrant audience interaction. During the initial presentations by panelists, we will provide attendees with a place to ask questions via text, and “upvote” each other’s questions. If the conference platform allows, we intend to give attendees the opportunity to ask questions via voice and video after our initial discussion. After the panel, notes and links will be available online, in the location also shared in the 2020 proceedings. <http://bit.ly/ta-training-panel-2020>

## 3 Panel Structure

The panel will start with approximately 10 minutes for each member to share their strategies for TA training. We’ll discuss TA training at each of the course, departmental, and institutional levels providing context for what works best, and what aspects of training deserve attention. Each panelist will describe the roles that their TAs take on, and the typical training process for those roles.

After initial presentations, the remaining time will be allocated to audience questions. We expect audience members will ask about best practices ways to adapt these strategies to their institutions. Panelists will share links to resources and tools they have used, which will be available [as a document at the end of the panel](#) [1].

## 4 Position Statements

### 4.1 Michael Ball (Moderator)

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UC Berkeley now has nearly 500 TA appointments each semester. TAs are mostly undergraduates, especially in the lower division courses. A typical undergraduate TA first serves as lab assistant, before taking responsibility for a single section of students. Returning TAs earn more responsibility: helping to write lab or discussion section content, manage course infrastructure, and coordinating exams. Graduating seniors take on the role of lead summer instructors for some of our largest courses.

We have developed TA training with four different pedagogy courses that target students at different stages. UC Berkeley has a campus-wide requirement that all first time TAs take a semester-long pedagogy seminar. In Computer Science, we offer two versions: one designed for TAs, and one designed primarily for lab assistants. Many lab assistants now already satisfy campus requirements when they are first hired. This helps spread out the practice time for new TAs and increases the number of students willing to take on a demanding role.

Many TAs are “career TAs”, who teach the same course for multiple semesters. Returning TAs will lead weekly meetings training first-time TAs on leading sections or pair up with a new TA to train them course infrastructure. Oftentimes, TAs rotate their roles to learn more about a course and ensure that there is always someone available to take on a project.

Recently we have added optional courses[6][7] that target head TAs and upcoming summer instructors.

#### 4.2 Justin Hsia

Graduate and undergraduate CSE TAs at the University of Washington are hired under different contracts and assume a combination of responsibilities from leading sections, holding office hours, grading assignments and exams, assisting in lecture, participating on the discussion board, and course development. Course staff sizes can vary from a single TA to upwards of 50 TAs. TAs receive training, often very course-specific, at the discretion of their instructor (e.g. during staff meetings, being paired with other TAs), but our challenge is to provide an avenue for TAs to improve across the diverse set of roles, experiences, and courses.

We have compiled a TA Handbook to answer most administrative questions. Our two-course Intro series has *mandatory* 1-credit new TA training and we offer CSE General TA Training, an *optional* paid seminar that covers job skills and basic pedagogy, for all other first-time TAs. Both trainings aim to support new TAs, build community, and introduce them to important teaching concepts. We run a joint Inclusive Community Training session for both sets of new TAs.

Beyond training for first-time TAs, we also offer a quarterly opportunity to all TAs to participate in peer section observations for feedback and exposure to different teaching styles. We recently launched a new seminar called Equitable and Inclusive Computer Science Pedagogy for students interested in teaching computing.

#### 3.3 Andrew DeOrio

At the University of Michigan, a team of undergraduate and graduate teaching assistants play a big role in the student

experience both in lower- and upper-level courses. TAs lead lab sections, hold office hours, help write and grade exams.

Our hiring process focuses on students who can explain concepts well and are passionate about teaching. We specifically do not select for grades. All TAs are required to attend a one day-long training put on by the College of Engineering.

Recently, the EECS department has been experimenting with an optional TAs training course for undergraduates. Many courses, especially the intro and foundational courses with large TA teams, do continuous course-specific TA training throughout the term.

#### 3.4 Adam Blank

Caltech’s CS courses primarily hire undergraduate TAs. Selection begins with students declaring interest on a central Google Form sent out by the department that asks basic questions about grades and what courses students are interested in TAing. Depending on the course, students are either directly hired or go through interviews held by the course instructors. Once hired, TAs go through two one hour sessions held by our [Center for Teaching and Learning](#) [4]. For TAs that will also be holding recitation, the instructor may optionally set up microteach sessions held by the CTLO as well. Some courses also have weekly staff meetings where microteaches sometimes happen.

The CTLO also selects and trains a “[TA Fellow](#)” for the department who is responsible for potentially doing additional training and being a liaison between the TAs and instructors [5].

Students interested in on-the-job training or a lower time commitment may choose to be “Dedicated Dean’s Tutors” and hold office hours and go to a weekly staff meeting. The intention of this position is to have a lower stakes training period for new TAs.

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